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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/904,889

07/16/2001

Hideobu Sakamoto

210817US2

3675

22850

7590

09/20/2005

OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.  
1940 DUKE STREET  
ALEXANDRIA, VA 22314

EXAMINER

SHARON, AYAL I

ART UNIT

PAPER NUMBER

2123

DATE MAILED: 09/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/904,889

Applicant(s)

SAKAMOTO ET AL.

Examiner

Ayal I. Sharon

Art Unit

2123

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 July 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 and 2 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 2 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Introduction***

1. Claims 1-2 of U.S. Application 09/904,889 filed on 07/16/2001 are presented for examination. The application claims priority to Japanese Application 2001-14870 dated 01/23/2001.
2. Applicants have cancelled claims 3-10, and have substantially amended claims 1-2.
3. Examiner has found Applicants' arguments (see pp.8-9) regarding the Yu and Pugachev references to be persuasive. The rejections based on these references have been withdrawn.
4. New art rejections have been applied, as necessitated by Applicants' amendment.

### ***Oath/Declaration***

5. Examiner reminds the Applicants of their signed declaration, which acknowledges the duty to disclose to the Office all information known to them to be material to patentability as defined in 37 CFR 1.56.
6. Examiner has located U.S. Patent 6,256,591. A co-inventor of that issued patent, Mr. Sakamoto, is also a co-inventor of the instant application. Examiner has also located U.S. Patent 6,268,610. A co-inventor of that issued patent, Mr. Pu, is also

a co-inventor of the instant application. The Applicants did not disclose the issued patents to the Examiner.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. The prior art used for these rejections is as follows:
9. Yoda et al., U.S. Patent 6,256,591. (Henceforth referred to as "Yoda").
- 10. Claims 1-2 are rejected under 35 U.S.C. 102(e) as being anticipated by Yoda.**
11. In regards to Claim 1, Yoda teaches the following limitations:

*Claim 1 (Currently Amended): A radiation treatment system comprising:*

*simulation means for executing radiation treatment simulation for dividing a radiation exposure region and a peripheral region thereof to be irradiated with particle beams into a plurality of unit radiation exposure regions, and then applying particle beams according to a shape of each divided unit radiation exposure region; and*

(See Yoda, especially: Figs. 5a-5e and associated text at col.5, line 61 to col.6, line 44; and Fig.2, Items ST2 and ST3, and associated text at col.5, line 30 to col.6, line 7)

*radiation treatment planning means for obtaining a radiation treatment condition for causing flatness, which is a degree of uniformly*

*irradiating the radiation exposure region with a proper dose of particle beams, to be in a desired range, and a dose of particle beams applied to the unit radiation exposure region of the peripheral region to be minimized, in the case where the simulation means executes the radiation treatment simulation, and then making a radiation treatment plan reflecting the radiation treatment condition, wherein*

(See Yoda, especially: col.10, lines 49-57, which teaches:

"The flatness of a predetermined range (range corresponding to the tumor) in the internal dose distribution formed by the present invention is about 2% or below, and dose attenuation characteristic in a portion behind the tumor is ideal. The result obtained by the present invention gives a theoretical limit because it is physically impossible to obtain an attenuation rate exceeding the attenuation characteristic of the monoenergetic proton beam 42.")

*the simulation means divides the radiation exposure region and the peripheral region thereof into unit radiation exposure regions of paid forms whose size is set according to a radiation beam size that is decided by an operation condition, which decides the flatness, of the radiation treatment apparatus, and performs radiation treatment simulation that simulates operation for applying radiation treatment for the unit radiation exposure regions with a pitch of one half of one side of the grid as a step size, and wherein*

(See Yoda, especially: the above cited sections)

*the radiation treatment planning means determines a degree of contribution made by a dose of radiation on the flatness of radiation exposure region at the unit radiation exposure region simulated on the peripheral region based on the dose of radiation at the radiation beam size simulated by the radiation treatment simulation, and based on the result of this determination, the radiation treatment planning means obtains an operation condition for the radiation treatment apparatus as the radiation treatment condition in which the peripheral regions that satisfy the desired flatness in the radiation exposure region, and whose number of grid becomes minimum to obtain the flatness.*

(See Yoda, especially: the above cited sections)

12. Claim 2 is a method claim that teaches the same limitations as Claim 1. It is therefore rejected under the same grounds.

**Conclusion**

13. The following prior art, made of record and not relied upon, is considered pertinent to applicant's disclosure.
14. U.S. Patent 6,268,610 to Y. Pu. This patent was issued to one of the co-inventors of the instant application. Figs. 4 and 5, and associated text, Pertain to "flatness" of exposure of the irradiation beam.
15. U.K. Patent Application 2,371,462 A. This application is a co-pending U.K. application that claims priority to the instant application.
16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Art Unit: 2123

***Correspondence Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ayal I. Sharon whose telephone number is (571) 272-3714. The examiner can normally be reached on Monday through Thursday, and the first Friday of a biweek, 8:30 am – 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Picard can be reached at (571) 272-3749.

Any response to this office action should be faxed to (571) 273- 8300, or mailed to:

USPTO  
P.O. Box 1450  
Alexandria, VA 22313-1450

or hand carried to:

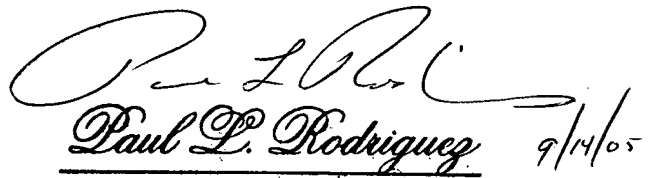
USPTO  
Customer Service Window  
Randolph Building  
401 Dulany Street  
Alexandria, VA 22314

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Tech Center 2100 Receptionist, whose telephone number is (571) 272-2100.

Ayal I. Sharon

Art Unit 2123

September 9, 2005

  
Paul L. Rodriguez 9/14/05  
Primary Examiner  
Art Unit 2125